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11/8/2010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventor: Mitsuru UESUGI   Art Unit 2611

Appln. No.:   10/563,248   Exr. L. Williams

Filed: January 4, 2006   Conf. No. 8676

For: METHOD OF GENERATING SPREADING CODES, CDMA TRANSMISSION
              APPARATUS, AND CDMA RECEPTION APPARATUS

AMENDMENT UNDER 37 CFR § 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Final Rejection dated August 4, 2010, please amend the above-

captioned application as follows:

<u>IN THE DRAWINGS</u>

A Submission of Proposed Drawing Amendments, with a replacement sheet for Fig. 14, is submitted herewith.

IN THE SPECIFICATION

1. Amend paragraph [0138] as follows:

In another aspect of the CDMA transmission apparatus of the invention, an inverse discrete Fourier transformer is applied ~~as~~ to the spreading code generator and the spreader.

2. Amend paragraph [0140] as follows:

In still another aspect of the CDMA transmission apparatus of the invention, a plurality of cascaded inverse discrete Fourier transformers is applied ~~as~~ to the spreading code generator and the spreader, and performs inverse discrete Fourier transform on a transmission signal hierarchically.

IN THE CLAIMS

Please amend the claims as follows:

<u>Listing of Claims</u>

Claims 1-12 (Cancelled).

13. (Previously Presented) A CDMA transmission apparatus comprising:

a spreading code generator that generates a bth chip C(a,b) of an ath spreading code by a following equation,

$$C(a,b) = e^{(j2\pi n/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code, n=a×b, a=0~N-1, and b=0~N-1; and

a spreader that spreads a transmission signal using the spreading code generated in the spreading code generator, wherein:

a plurality of cascaded inverse discrete Fourier transformers are used to constitute the spreading code generator and the spreader, and perform inverse discrete Fourier transform on the transmission signal hierarchically.

Claim 14 (Cancelled).

15. (Currently Amended) A CDMA reception apparatus comprising:

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a spreading code generator that generates a bth chip C(a,b) of an ath spreading code by a following equation,

$$C^*(a,b) = e^{j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code, $n=a \times b$, $a=0\sim N-1$, and $b=0\sim N-1$; and

a despreader that despreads a received signal using the spreading code generated in the spreading code generator, wherein

a plurality of cascaded discrete Fourier transformers are used to constitute the spreading code generator and the despreader spreader, and perform discrete Fourier transform on the received signal hierarchically.

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Applicant acknowledges with appreciation the indication in the Final Rejection that claim 13 is allowed and claim 15 is allowable. Claim 15 has been amended in the manner suggested in the Final Rejection. Therefore, allowance of claim 15 is deemed to be warranted.

Fig. 14 has been amended to illustrate the indicated brackets and parentheses correctly.

The specification has been amended in the manner suggested in the Final Rejection. No new matter is believed to be introduced by the amendment of the specification.

Claims 12 and 14 have been cancelled.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

Date: November 4, 2010   James E. Ledbetter
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